

# Impact of community-based approaches to wildlife management: case study of the CAMPFIRE programme in Zimbabwe

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## SUMMARY

The objective of this study was to elicit community perceptions on the effectiveness of the CAMPFIRE programme, a community initiative, designed to benefit rural communities in Gonono ward in the Zambezi valley. Five villages and 76 respondents were selected from the ward using simple random sampling. Data collection included a structured questionnaire administered to households, semi-structured interviews with key informants, such as chiefs, headmen and local council staff, transect walks and participant observations. The results of the study revealed that, although the CAMPFIRE concept has been instrumental in creation of employment and infrastructure, the local community considers that no significant changes have occurred to their livelihoods. The findings suggest that the current model of wildlife conservation in Zimbabwe is not promoting total community participation. Future models need to focus on total involvement and independence from government structures. However, this can only happen when there is sufficient capacity building in communities on a wide number of issues, including general management, to ensure long-term sustainability.

## BACKGROUND

Zimbabwe's economy has been largely dominated by the agricultural sub-sector since the country attained independence. This sector generally accounted for about 40% of national foreign currency earnings (Zimtrade 2002). However, in recent years, eco-tourism has become an important source of economic development in Zimbabwe. The potential of tourism is unambiguous, given that the country is home to one of the seven natural wonders of the world – Victoria Falls. The tourism sector has grown to become the second

most important source of foreign exchange to Zimbabwe, with an estimated 6–9% contribution to gross domestic product (Zimtrade 2002).

Wildlife utilisation has become a legitimate form of land use in Zimbabwe in both commercial and communal areas (GOZ 2002). To ensure that rural communities derive benefits from natural resources, a number of initiatives, including the Communal Area Programme for Indigenous Resources (CAMPFIRE), have been developed. CAMPFIRE has been a major player in

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spearheading wildlife conservation in rural communities (Murombedzi 2003). The programme is based on the principle that local communities who take responsibility for sustainable management of resources should benefit directly and equitably from such resources. Murphree (1997) noted that communities can become effective institutions for sustainable resource management. In order for this to happen, communities must be granted the right to use resources, determine the mode of usage, benefit fully from use, determine distribution of such benefits, and determine rules of access. Martin (1986) outlined the major objectives of CAMPFIRE: voluntary participation of communities in a flexible programme which incorporates long-term solutions to resource problems; introduction of a system of group ownership with defined rights of access to natural resources for community resident in target areas; and provision of appropriate institutions under which resources can be legitimately managed and exploited by resident communities. In addition, the programme also seeks to provide technical and financial assistance to involved communities to realise these objectives.

Whilst the main achievement of CAMPFIRE has been broad-scale implementation of projects in communal areas, it has been criticised for failing to devolve responsibilities and management from Rural District Councils to producer communities (Murombedzi 2003). The changing context ushered in by land and agrarian reforms has also created new challenges for the programme. Areas that were previously sanctuary zones for conservation of wildlife, now contain newly-resettled farmers, creating the potential for human-wildlife conflicts.

Since the country is a signatory to numerous international protocols on the conservation of wildlife and biodiversity, it is imperative to assess the extent to which the current institutional framework is promoting conservation of wildlife. Institutions have often been identified as the missing link between poverty alleviation and economic development. Commons (1957) described an institution as 'a set of rules by a set of individuals to organise repetitive activities that produce outcomes affecting these individuals and potentially affecting others.' Thus, it is essential to assess the effectiveness of the CAMPFIRE programme within the changing socio-economic context.

The CAMPFIRE programme has traditionally been given a mandate to spearhead conservation of wildlife resources in communal areas of Zimbabwe. However, the changing context ushered in by land and agrarian reforms has created new challenges for the programme. This has resulted in social and economic costs in the form of biodiversity loss as well as compromised aesthetic values on the land. It also has implications for short- and long-term growth prospects for eco-tourism and economic development. Therefore, it is not clear whether this institutional arrangement is effective in the conservation of wildlife resources. The benefits trickling down to communities, problems faced, and possible mitigation measures need to be explored for long-term environmental sustainability.

The broad thrust of this study is to assess local community perceptions on the efficacy and value of CAMPFIRE for their livelihoods. The specific objectives are:

- To elicit community perceptions on whether CAMPFIRE has economically improved the livelihood base;
- To determine the attitudes and perceptions of local people towards wildlife conservation in newly-resettled areas;
- To assess the extent of involvement of communities in CAMPFIRE decision-making on wildlife utilisation.

From a broader perspective, the research aims to contribute to a socio-economic analysis of project interventions in Zimbabwe. The study aids policy-making and formulation for government and non-government organizations that will fully empower local communities in managing wildlife resources. It also addresses the question of environmental sustainability, which has come to the fore in Zimbabwe following changes in the structure of the agricultural sector and its relationship with other strategic sectors, such as tourism.

## WILDLIFE CONSERVATION STRATEGIES

### Wildlife conservation in southern Africa

The history of wildlife conservation efforts in Africa has been dominated by a universal approach of divorcing local communities from any control or rights to exploit their wildlife. This has been

coupled to law enforcement efforts by central and local authorities (notably national parks and wildlife departments) to protect wildlife at the expense of the livelihoods of local communities (Jansen 1990). Most conventional wildlife policies within southern Africa were inherited from the colonial era and lacked the capacity to deal with local participation in wildlife management and use of such resources. The colonial wildlife management style excluded rural communities from most legal uses of wildlife resources. However, local people pay the price for conservation in the form of damaged crops and loss of human lives. Rural communities receive few legal benefits from wildlife (Gibson 1994), therefore, they resort to illegal hunting. Exclusionary wildlife policies have provided few incentives for sustainable use of wild animals. Rural communities consistently chose to kill wildlife, despite restrictions, and some even assist in poaching activities. The efforts to encourage local people to cooperate in reducing poaching or aid in conservation efforts were much reduced during the colonial period.

In an effort to refocus wildlife conservation practices, conservationists, international conservation organisations and African wildlife departments have formulated policies that include local communities in planning and management of natural resources, as a means to promote economic growth (IUCN 2000). Such new initiatives, implemented through programmes such as ADMAD in Zambia and CAMPFIRE in Zimbabwe, hope to induce individuals away from their former practices, particularly hunting, towards behaviour which will conserve wild animals (Gibson 1994).

According to a review by the World Bank, implementation of community-based wildlife utilisation schemes in southern Africa have the potential to promote community development. Benefits of community-based wildlife utilisation schemes include increases in local incomes, improvement in living standards, strengthening local community structures and human resources, and generally empowering local communities to manage their own natural resources with minimal external input or control.

Recently, wildlife conservation has been given a regional perspective, mainly in the form of trans-frontier parks. Transfrontier conservation areas straddle national borders and cover large natural systems through which humans and wildlife

migrate across borders (IUCN 2000). An example of a trans-frontier park is the Great Limpopo Transfrontier Park, which includes national parks in Zimbabwe, Mozambique and South Africa.

### **Economic value of wildlife**

According to Swanson and Barbier (1992), the total economic value of wildlife comprises direct and indirect use options and existence value. Direct use values include wildlife and harvested products, e.g. skins, hides, tusks/horns, tourism and recreation. Wildlife species also have important indirect use value through their key ecological roles, e.g. elephants are known to have an essential ecological role in African savannas and forests through diversifying ecosystems, dispersing seeds, reducing bushlands, expanding grasslands and reducing the tsetse fly, which is of value to livestock health and grazing (Swanson and Barbier 1992).

### **OVERVIEW OF THE CAMPFIRE PROGRAMME**

The WINDFALL programme was replaced by the CAMPFIRE programme in 1981. Prior to the implementation of CAMPFIRE, wildlife conservation relied mainly on the use of guns and guards, thus making it an expensive exercise. Poaching problems continued, particularly in those areas adjacent to national parks and in areas inhabited by large numbers of wild animals. Many rural people supported the illegal harvesting of wildlife, either to reduce damage from wild animals to their crops and livestock, or to profit from illegal sale of wildlife (Child 1985). CAMPFIRE seeks to develop rural economic and resource management institutions through sustainable use of wildlife resources (Martin 1986). Its conservation practices are based on the principle that land belongs to the people who live in the environment and they have to utilise it sustainably.

The government of Zimbabwe granted authority to utilise and manage wildlife to two districts (Guruve and Nyaminyami) in January 1989. This means that accrued money from marketing wildlife products and services will benefit local communities, not the central government. District councils act as custodians of wildlife resources on behalf of the local communities (Maveneke 1995). The two districts have been able to disburse substantial sums

back to the communities since 1990. The granting of appropriate authority requires that most income be distributed to 'producer communities,' and that the district demonstrates that it can manage, or obtain management from elsewhere, its wildlife. This grant includes responsibility for problem animal control, law enforcement and protection of resources (Jansen 1990).

The ultimate aim of CAMPFIRE is formation of an institutional structure under which communities can carry out management of natural resources and maximise sustainable returns. It aims to rectify communal resource ownership by more equitable allocation of wildlife resources and by placing a value on such resources (Martin 1986). Gadgil (1995) summarised the Parks and Wildlife Act (1982) that has facilitated the implementation and smooth running of CAMPFIRE for local communities through their Rural District Councils (RDC):

- Greater control over formal public wildlife in communal areas in defined territories;
- Enhanced capacity to add value to local wildlife;
- Specific financial rewards linked to conservation value and wildlife within their territories.

### Structure of CAMPFIRE

Initially, the CAMPFIRE programme used a top-down approach when implementing wildlife management strategies. This approach excluded local people from decision-making. It has now been concluded that, if communities are restricted from using their resources, they tend to over-exploit them. Although conservation is about species and ecological phenomena, it is also a socio-economic process that affects and is affected by humankind (Child 1985). CAMPFIRE is essentially about entitlement and empowerment. It provides communities with access to a sustainable resource base that they can use for their own benefit. It aims to develop the institutions necessary to manage the resource on a sustainable basis within rural communities.

At the grassroots level, each village elects six members to sit on a village CAMPFIRE sub-committee. The representatives sit on ward sub-committees, chaired by a councillor. The councillor sits on the district subcommittee, which also includes the RDC chairman and vice-chairman. Advisors from different government

departments, such as the Forestry Commission, Department of Natural Resources (DNR) and Ministry of Agriculture, provide technical assistance to the council (Campfire News 2001).

Over 90% of the revenue generated from CAMPFIRE comes from foreign safari operators through sport hunting of buffalo, elephants, lions and other wild animals. The system works through the district councils who set hunting quotas in collaboration with the wildlife department. Then, a safari operator with the requisite capital and expertise is selected to promote the district and draw in international clients (Child *et al.* 1997). Under the CAMPFIRE principle, district councils are entitled to disburse at least 50% of CAMPFIRE revenues to the sub-district producer communities (with a disbursement target of 80%, while the remaining 20% is used to manage organisational activities), and the council has a mandate to devolve management functions over time (Martin 1986).

## RESEARCH METHODOLOGY

### Study area

The research was conducted in Gonono ward, situated in the mid-Zambezi valley between the Manyame/Eastern Gwase and Kadzi Rivers, with the Mozambique border to the north and an old game fence to the south. The ward comprises five villages: Kapurira, Kandava, Hairi, Jowa and Manjinga. The total population of the ward is 6617, with some relatively new communities that have benefited under the land reform programme.

### Climate and vegetation

The mid-Zambezi valley is characterised by unreliable, low and erratic rainfall (450–800 mm). It has an annual average temperature between 25 and 33°C. October and November are the hottest months, with maximum temperatures of over 40°C, whereas June and July have minimal temperatures of around 10°C (Gadgil 1995).

There are four vegetation types within the ward: *Acacia* scrubland, open shrubland, mixed scrubland, and mixed Mopane woodland. The dominant vegetation is Mopane woodland, which is associated with other vegetation units such as *Kirkia acuminata* and *Acacia* species.



## Data collection

Secondary data collection, interviews, survey research and transect walks were used to collect data. Secondary data assisted the researchers in analysing trends in progress of the project and in verifying economic data collected through survey research

A pilot study consisting of group discussions was conducted to determine issues that matter to the community. The main participants were council employees, wildlife committees, ward councillors and village development committees. Issues highlighted included imbalance in village development and the socio-economic role of the project. A semi-structured questionnaire was used to determine the perceptions and attitudes of communities towards the programme. Issues included the social, traditional and economic value of the programme. A five-point Likert scale with semantic differential statements was used to examine the basis of the relative perceptions, and to provide a continuous scale. It is possible to consider data as normally distributed when given a sufficiently large number of categories and the absence of skew. In this questionnaire, statements were phrased to assess local community attitudes and perceptions towards the programme.

An individual in-house questionnaire was used for interviewing the communities. Prior to administering the questionnaire, a pre-test questionnaire was conducted in the target population. The pre-test involved debriefing respondents to make sure that they understood the questions. In order to verify the information obtained from the questionnaire, key informant interviews were done. Interviews were mainly targeted at traditional leaders, local safari operators and the Member of Parliament in Guruve who initiated the programme. Interviews with key informants obtained information on perceptions, attitudes, beliefs and opinions on the programme. Transect walks were also conducted to enable the researchers to gain a true reflection of programme operations and achievements within the ward.

Sample selection was based on accessibility of the villages and their participation in the programme since its establishment. Simple random sampling was used to select the households to be interviewed. A list of the entire household in each village was obtained from the ward headmen. Each

**Table 1** Description of the sample of villages, households and individuals

Village	No households	No interviewed	Sample (%)
Kapurira	153	19	12.4
Manjinga	247	25	10.1
Hairi	103	9	9.9
Jowa	113	12	10
Kandava	107	11	10.2
Total	723	76	

household was numbered. Households to be interviewed were selected from random numbers generated with a calculator. This random sampling ensured that each household had an equal chance of being represented and reduced bias (Table 1).

The Statistical Package for Social Sciences (SPSS) was used to analyze the five-point Likert data on perceptions and attitudes of local people towards the programme. Statistical tools used for analysis included: average means, a T test, analysis of variance, and a Fisher LSD test.

## RESULTS

### Benefits derived from CAMPFIRE

The Gonono community is realising many benefits from CAMPFIRE including:

1. **Employment** – The programme has created temporal and permanent employment, such as brick moulding during construction of schools and clinics. 15% were employed at a local ranch and safari operator as cooks, game guards, skimmers and guides; 4% were employed by the Anti-Poaching Unit (APU) as game scouts and paid from the ward CAMPFIRE profits; but 81% said that they had not benefited in terms of employment within the programme. Of the 21% who were formerly employed by the local safari operator, Impala ranch and APU, 19% came from Kandava, Hairi and Jowa, in the centre of Gonono, only 2% from Kapurira and Manjinga are formally employed.
2. **Dividends** – 80% of respondents said that they benefited from cash dividends from the project, although they last received them in 1997; 20% have not benefited from cash dividends.

Cash dividends were given to household heads who had resided in the ward for at least ten years.

3. **Construction of infrastructure** – Jowa, Manjinga and Hairi communities said that they have constructed schools and dip tanks in their villages from CAMPFIRE proceeds. Kapurira and Manjinga said that they have not benefited from infrastructure development.

### Decision-making in wildlife conservation

Respondents from Kandava, Jowa and Manjinga indicated that they are not being involved in decision-making (Table 2). The variation in responses relating to community participation in each village is small, except in Kapurira. Low levels of variation in individual responses within each village indicate high levels of consistency in the perception of each village. The Likert scale used ranged from 1- strongly agree through to 5- strongly disagree. The general response from Kandava, Jowa and Hairi indicated that wildlife should be sustainably conserved. However, Kapurira and Manjinga neither agreed nor disagreed.

### Social value of CAMPFIRE

In assessing attitudes towards the social value of CAMPFIRE, aspects such as its ability to reduce the incidence of conflicts, rate of poaching and compensation for wildlife damage were used as key parameters (Table 3). The general feeling from all communities is that the programme is failing to resolve human-wildlife conflicts in the area. All five communities complained that they have never been compensated for wildlife damage. However, it was felt that the rate of poaching had decreased and the number of wild animals had increased due to the conservation efforts.

### Economic value of CAMPFIRE

Most respondents felt that they are not economically benefiting from the programme (Table 4). The Hairi community neither agreed nor disagreed. All communities also felt that they had not benefited directly in terms of significant infrastructure development and were non-committal about money allocated per ward. While they obtained meat allocations from hunting, this only occurred during the hunting season. The system for meat allocation is basically a free-for-all, and each household has to 'rush' for its allocation, and the

**Table 2** Attitudes of local people towards wildlife conservation

Item	Kandava	Jowa	Kapurira	Manjinga	Hairi	Mean Score
Taking a leading role in decision-making on wildlife resources	4	4	2	4	3	3
Involved in setting up quotas	3	2	1	3	4	3
Involved in contracting safari operators	2	2	2	2	2	2
Involved in decision-making on development projects	4	4	2	3	4	4

**Table 3** Local people's perception of the social value of the programme

Item	Kandava	Jowa	Kapurira	Manjinga	Mean
CAMPFIRE project has resolved human-wildlife conflicts	3	4	4	5	4
People have been compensated for wildlife damage	3	4	2	5	4
Rate of poaching has decreased since the programme inception	3	4	3	4	4
Wildlife population has increased throughout the area	4	2	4	3	3

**Table 4** Community perceptions towards the economic value of the programme

Item	Kandava	Jowa	Kapurira	Manjinga	Hairi
The community has benefited economically	5	4	4	4	3
Project has constructed infrastructure for e.g. schools and clinics	2	1	2	2	4
Money allocated per ward has increased	3	3	3	3	3

physically weak and women-headed households were disadvantaged.

## DISCUSSION

Employment opportunities are only benefiting a few individuals. People from Kandava, Hairi and Jowa are benefiting from employment at the local safari camp and the Impala ranch as cooks and game attendants. Communities in Kapurira and Manjinga are not benefiting from employment or improvement to their livelihoods. No local people are attached to the safari camps as skilled game guides or professional hunters. This shows that the programme is not benefiting the community in terms of training and capacity building. Murphree (1997) noted that no trainee in any CAMPFIRE programme has qualified as a game guide.

Local communities receive cash dividends from wildlife proceeds, but 55% of them still perceive the programme as council-owned. The community do not have total user rights over their natural resources. This is supported by the perception of the local leadership that the communities cannot be lured into participating in conservation through revenue distribution. The amounts of dividends are also declining as a result of an increase in population density. Bond (1997) found similar results and found that CAMPFIRE revenues per household have declined since 1989.

Control over wildlife resources is still vested in the local authority, with only partial devolution of natural resource issues to local communities, such as contracting safari operators by Guruve council. This indicates that communities benefit little since the council is also an interest group (Murombedzi 2003). Kapurira and Manjinga are not benefiting from developmental projects. Dip tanks, schools and clinics are mainly concentrated in Gonono, which comprises villages such as Jowa, Hairi and Kandava. Villagers in Kapurira and Manjinga have

to walk approximately 15k m to reach a dip tank or clinic.

CAMPFIRE has improved the attitude of the local community towards wildlife conservation. All the communities believe that wildlife should be conserved for the benefit of future generations and for economic reasons. Village location in relation to the forests affected people's perceptions towards wildlife. Communities with fields close to the forest (e.g. Kapurira and Manjinga) are not sure whether they should continue conserving wildlife because of occasional crop damage. A study in Gokwe North by Dzingai (1994) yielded similar results: villagers perceived wildlife as the archetype of under-development rather than a potential resource, because of the crop damage they experienced.

The issue of equitable gender representation still remains in the CAMPFIRE programme. Women continue to be under-represented in decision-making on utilisation of wildlife resources. Most wildlife committees, from the village up to the ward, are male-dominated. Low participation of females can be attributed to high illiteracy and cultural mores that have tended to exclude women. Nabane (1994) studied the Masoka community and also found that women were underrepresented in CAMPFIRE committees, as also found by Tinker (1990). The United Nations Development Programme (UNDP) argued that different responsibilities of men and women have left women with less time to devote to new activities.

The results reveal that local communities are not benefiting economically from the project and this will be detrimental to success of the programme. The economic and operational costs of managing wildlife far exceed the benefits to communities. According to Madzudzo (2000), if wildlife has no economic value to rural communities they will have no reason to conserve it. The general operations of the programme can be said to benefit the local safari operators, who have received the real

profits, rather than rural communities who own the resources (Duffy 2001).

CAMPFIRE has failed to resolve human to wildlife conflicts. The Gonono community still experience damage from wildlife, and there has been an increase in the loss of livestock to lion and hyena predation. An increase in crop damage may result from large numbers of new settlers along wildlife corridors. Madzudzo (1995), in Omay communal lands, also found that land set aside for wildlife had become a home for settlers.

## CONCLUSIONS AND RECOMMENDATIONS

### Objective 1: To elicit community perceptions on whether CAMPFIRE has economically improved the livelihood base

Although CAMPFIRE has created employment opportunities, construction of infrastructure and dividend payments, most community members think that the programme has not significantly improved their livelihood base, mainly because most activities are centered in the Rural District Councils.

### Objective 2: To determine attitudes and perceptions of local people towards wildlife conservation in newly-resettled areas

Local community members are generally supportive of the concept of wildlife conservation.

### Objective 3: To assess the extent of involvement of communities in CAMPFIRE decision-making in wildlife utilisation

Control over wildlife resources is still vested within the local authority, and devolution to local communities has only been partial. Local communities pay the costs of living with wildlife but are left out of decision-making, e.g. Guruve council still negotiates contracts with the safari operators. Thus, most respondents are not involved in decision-making on wildlife utilisation.

## Recommendations

- There is need to train local communities in management of game populations, operation of safari businesses, anti-poaching, financial accounting and reporting.
- Conservation awareness needs to be increased among communities through training and environmental education. This will strengthen the concept of sustainable utilisation of wildlife, a key concept in CAMPFIRE philosophy.
- Councils should develop training programmes to involve the community in managing and directly benefiting from wildlife areas.
- Councils should provide compensation for damage to crop, domestic animal losses and human deaths caused by wildlife. This will help people to appreciate the value of the programme.
- More cooperation is needed between safari operators and communities to ensure that quotas are set aside specifically for community consumption.

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